THE STATE of ALASKA
GOVERNOR MICHAEL J. DUNLEAVY

Department of Natural Resources
DIVISION OF OIL AND GAS
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November 22, 2019

Erik Opstad
General Manager – Alaska Operations
Accumulate Energy Alaska, Inc.
PO Box 112212
Anchorage, AK 99511

RE: **LONS 19-004**, **Accumulate Energy Alaska, Inc.**, **Charlie #1 Exploration Well**, **Lease Plan of Operations Decision Exploration Phase**

Dear Mr. Opstad:

I. INTRODUCTION

On August 8, 2019, Accumulate Energy Alaska, Inc. (Applicant) submitted a request to the Division of Oil and Gas (Division) for approval of a Lease Plan of Operations (Plan) to carry out the Charlie #1 Exploration Well project (Charlie #1). Charlie #1 is approximately 29 miles west of the Franklin Bluffs pad. Approval of this Plan, along with approvals from other state and federal agencies (Agencies), is necessary for Accumulate Energy Alaska, Inc. (AEA) to carry out the project. Any further exploration is subject to further review and approval by the Department of Natural Resources (DNR).

After state land is leased for oil and gas development, projects follow a phased progression. These phases include exploration, development and transportation. The Division continually examines effects of oil and gas activities as projects transition throughout each phase. Before the next phase of a project may proceed, the Division must provide notice to the public and the opportunity to comment before issuing a decision. AEA's proposed operations would begin the exploration phase for oil and gas lease ADL 393380.

II. SCOPE OF DECISION

The DNR Commissioner has delegated authority for approval of Lease Plan activities to the Division under Department Order 003 in accordance with Alaska Statute (AS) 38.05 and 11 Alaska Administrative Code (AAC) 83.158. As set forth below, the Division has evaluated the proposed Plan to determine if it provides sufficient information as required by 11 AAC 83.158. In approving a Plan, the Division may require amendments that it determines are necessary to protect the State's interests (11 AAC 83.158(e)).

The Plan proposes to drill one exploration oil well, Charlie #1, on oil and gas lease ADL 393380, located approximately 29 miles west of the Franklin Bluffs Pad. Thirty-four miles of ice roads will be constructed along with two 500 feet by 500 feet ice pads; one drill pad and one staging

pad. All operations will be conducted from the ice pads. Facilities used for the operation will include a satellite office camp, storage and laydown areas, a communication tower, and maintenance shops. The staging pad will be constructed one mile west of the Dalton Highway at milepost 386. The primary drilling objectives include testing and evaluating the Seebee Formation for oil, a target found in surrounding exploration wells. All facilities will be temporary.

The following Plan elements require authorization from other agencies:

Agency	Permit Type
Alaska Oil and Gas Conservation Commission (AOGCC)	Permit to Drill
AOGCC	Sundry Approval – Annular Disposal
AOGCC	Blowout Contingency Plan
DNR/ Mining, Land and Water (DMLW)	Land Use Permit
DNR/DMLW	Temporary Water Use Authorization
DNR/ Office of History and Archaeology (OHA)	State Historic Preservation Office (SHPO) Determination
Department of Environmental Conservation (DEC)/DW-APDES	Alaska Pollutant Discharge Elimination System (APDES) General Permit for North Slope (NS GP AKG332000) SWPPP and BMP
DEC/AQ	MGP1 Air Quality Permit for Land Drill Rigs
DEC/SPAR	Major Amendment (Rev. 3) to Oil Discharge Prevention and Contingency Plan (ODPCP) 15-CP-5241
DEC/EH	AEA SW Management Plan
DEC/EH	Temporary Storage of Drilling Wastes Plan
NSB/Planning	NSB Traditional Land Use Inventory (TLUI) Certificate of Clearance
NSB/Planning	NSB Development Permit
Alaska Department of Fish and Game (ADFG)/DH	Title 16 Fish Habitat
ADFG/PS	Public Safety Permit
United States Army Corps of Engineers (USACE)	CWA Section 404
US Environmental Protection Agency (EPA)	Spill Prevention Control and Countermeasure (SPCC) Plan
Department of Transportation and Public Facilities (DOTPF)	Driveway/Approach Road ROW Permit
DNR	LNO from Alaska Gasline Development Corp. to cross ADL 418997 pipeline right-of-way

III. LAND STATUS

The project area comprises state lands.

A. Division's Leased Lands: This section refers to Division managed oil and gas leases regardless of ownership of overlying surface lands.

Oil and Gas ADL: 393380
Oil and Gas Mineral Estate Lessees: AEA and Burgundy Exploration LLC
Surface Ownership and Access Agreement: State of Alaska
Special Use Lands: ADL 50666
Jointly Managed Lands: None
Other Considerations: N/A

Project Components	Meridian, Township, Range, and Section(s)	GPS Coordinates
Charlie #1 Ice Drill Pad	Umiat, T004N, R009E, Sec 21	69.6844° / 149.9260°
Charlie #1 Well Bore	Umiat, T004N, R009E, Sec 21	69.68415° / 149.9268°
Main TWR	Umiat, T004N, R009E, Sec 21	Varies – GPS coordinates in Appendix C of the Plan

B. State of Alaska Surface Lands: This section refers to State owned surface lands where no Division managed oil and gas leases exist.

Not applicable to this project.

C. Non-State Lands: This section refers to areas where the State does not own the surface land and no Division managed oil and gas leases exist.

Not applicable to this project.

IV. PROPOSED OPERATIONS

The Plan describes the proposed operations in full detail. The key details are summarized below.

AEA proposed the following schedule for 2019-2020. All dates are approximate and may be altered by weather or logistic requirements. The dates will also change because some of them precede this decision. The schedule provides the Division with an overall idea of the sequence and schedule of events. The Division reviewed this schedule with the expectation that dates early in the sequence would move back and that later dates for finishing drilling, demobilization and clean-up would remain the same.

A. Sequence and Schedule of Events

Project Milestone #	Project Milestone	Proposed Start Date	Proposed End Date
1.	Conduct field studies, project planning and design, and project permitting	7/14/2019	12/1/2019
2.	Inspect/survey main TWR alignment, TWR spur alignment and ice pads, sound potential water sources, and install thermistors	9/1/2019	9/15/2019
3.	Pre-pack all TWR alignments and pad locations	11/15/2019	12/15/2019
4.	Construct main TWR, TWR spurs and ice pads	12/15/2019	1/1/2020
5.	Mobilize drill rig, camp and support operations	1/1/2020	1/21/2020
6.	Drill & test Charlie #1	1/14/2020	4/27/2020
7.	Demobilize drill rig, test equipment, camp and support operations	2/22/2020	4/27/2020
8.	Cleanup, remediate & rehabilitate TWR alignments and ice pad locations	7/14/2020	9/14/2020

B. Well Sites

Using a Nordic #3 (or similar drilling rig) the Charlie #1 exploration well will be drilled to an approximate depth of 11,000 feet to test and evaluate the Seebee Formation for oil. The well may include laterals, sidetracks or additional penetrations from the proposed exploration pad. The well will be designed and permitted to abide by AOGCC regulations. Its use will follow AEA's well control plan, which includes various safety and emergency measures to ensure safe operation through the winter and following months. All operations will be conducted on pad.

C. Buildings

AEA plans to construct two 500-foot by 500-foot ice pads that will house temporary facilities. The staging pad is planned to be constructed roughly one mile west of milepost 387 along the Dalton Highway. Structures to be used include a satellite office, storage, a communication tower, maintenance shops, and a 60-80 bed camp.

D. Fuel and Hazardous Substances

Ultra-low sulfur diesel fuel will be trucked to the drill pad by commercial carrier for drilling, completion and well testing operations. AEA anticipates that approximately 16,800 gallons of fuel will be stored in double-walled aboveground storage tanks (ASTs) staged within secondary containment areas (SCAs) providing 110% of AST volume plus seasonal precipitation containment. No individual fuel storage tank will exceed 9,990 gallons. An onsite tanker truck will fuel ancillary equipment such as heaters, light plants, and heavy equipment.

Fuel and hazardous substance storage will comply with state and federal oil pollution prevention and contingency requirements found in 18 AAC 75, 40 CFR 112 and NSBMC § 19.50 and § 19.70. ASTs used to store flammable and combustible liquids are regulated by the EPA and will comply with the International Fire Code (IFC) and 13 AAC 50.025. Additionally, fuel storage, handling, transfers, and spill reporting will be conducted in accordance with AEA's Oil Discharge Prevention and Contingency Plan (ODPCP), which has been approved by the ADEC

as Plan No. 15-CP-5241, and the North Slope Environmental Field Handbook (NSEFH) and Alaska Safety Handbook (ASH). All bulk hazardous fluid and fuel transfers will be conducted in accordance with the fluid transfer guidelines in AEA's Fluid Transfer Checklist (found in Appendix A of ADEC 15 -CP-5241).

A variety of commonly used water-based mud drilling fluids and additives will be used to provide and maintain the correct drilling mud formulation for the conditions being drilled. Other drill fluid chemicals, required for testing and well stimulation, also may be used. The various additives are provided in 5-gallon pails, 55-gallon drums, or a variety of different sized (250-400 gal) isocontainers that are regulated by the USDOT and/or EPA and will be stored within SCA. All fuel and drill fluid SCAs are inspected daily by the on-site spill technician. All unused products will be returned to the supplier. All used fluids will be disposed of in accordance with AEA's Waste Management Plan and other applicable guidance documents and contract/ballot agreements.

During fuel and fluid transfer operations and equipment storage or maintenance activities, the site will be protected from leaking or dripping fuel and hazardous substances by using drip pans or other surface liners designed to catch and hold fluids under the equipment or by creating a specialized area using an impermeable liner or other suitable containment mechanism. Appropriate spill response equipment, as required in ODPCP 15-CP-5241, will be staged on location and managed/ maintained by an on-site spill technician contracted through Alaska Chadux Corporation (ACC). Trained spill technicians and fuel contractor personnel (oil handlers), operating under the Fluid Transfer Procedures, will always attend all fuel and fluid transfer operations. A copy of ADEC 15-CP-5241 will always be kept on site for guidance in controlling and cleaning up any accidental discharges of fuels, lubricants, or produced fluids.

The plan will include immediate response actions, reporting requirements, communication trees, receiving environments, spill cleanup mobilization response times, well control information and spill prevention guidance. Information related to immediate response actions, receiving environments, spill cleanup mobilization response times and well control can be found in the ADEC 15-CP-5241. AEA also has an approved Spill Prevention Control and Countermeasure (SPCC) Plan for tanks to be operated at exploration sites, including Charlie #1. The drilling and well testing contractors will develop and provide SPCC plans specific for their operations in support of the drilling and testing operations. The plans will be maintained and available on site. Contractor crews will be trained in the appropriate response and prevention strategies.

E. Solid Waste Sites

Waste management for this project will follow the Waste Management Plan (WPM) designed for the AEA ICEWINE project. The majority of the Resource Conservation and Recovery Act (RCRA) exempt wastes will be temporarily stored on site then disposed of by injection in Class I and Class II UIC disposal wells or by annular injection. Authorization for annular injection will be required from AOGCC.

RCRA exempt household hazardous waste will be temporarily stored on site in sewage tanks and subsequently hauled to the NSB-SA-10 wastewater treatment plant for disposal.

Non-hazardous solid waste will be temporarily stored on site in Municipal Solid Waste (MSW) and construction and demolition (C&D) Dumpsters. The Dumpsters will eventually be hauled to

the NSB-SA-10 landfill. Both MSW and C&D containers will be covered to minimize interactions with local wildlife. Metals will be stored and sent off site for recycling. Used oil will be placed in drums and transported off site for recycling or disposal.

RCRA hazardous wastes will be managed on site in satellite accumulation areas before being manifested and transported to be recycled or disposed of at approved facilities once the project operations are complete.

F. Water Supplies

Potable water will be trucked into working areas. DNR DMLW has issued temporary water use authorizations for the withdrawal of ice chips and water from 37 surrounding lakes. AEA estimates the total water use to be 98 million gallons for the life of the project. Under the guidelines of Alaska DEC authorization AKG332026, issued under the Alaska Pollutant Discharge Elimination System (APDES) general permit for North Slope activities (NS GP AKG32000), AEA has prepared best management practices and a Storm Water Pollution Prevention Plan to handle snowmelt and other run-off from pad facilities or operations.

G. Utilities

Electrical, natural gas, sewer, and water utilities will not be designed or located on the ice pads. Rig operations will be self-contained, powered by generators. Smaller dual generator sets will provide power to camps, offices, and other facilities. Satellite phone service and internet will be available at each field camp. Operational radio communications will utilize fixed base stations and truck-mounted radio equipment, with small communication towers placed at each pad. Potable water will be hauled to the site and domestic wastewater hauled from the site (see Subsections VIII-4 and VIII-5). Emissions sources for the construction, drilling, and operations will be similar to equipment and sources at other exploration drilling projects on the North Slope. Therefore, air emissions sources from the Project related to construction, drilling, and operations will be authorized under ADEC Oil or Gas Drilling Rigs Minor General Permit MGP1.

H. Material Sites

N/A. All activities will occur on ice roads and ice pads.

I. Roads

The proposed TWR alignment and ice pad locations and coordinates in Appendices A & C of the Plan reflect the results of fieldwork conducted by AEA in mid-August 2017 where a field team mapped routes and locations that avoided higher, drier tundra covered by shrubs, forbs, and tussock vegetation. This will be supplemented in September 2019 with further studies of a revised drill pad location further to the west. Starting in November 2019, winter operations will include pre-packing and constructing the Main TWR to access the Charlie #1 drill site where an ice pad will be built to support drilling operations.

Project road activities include the following:
1) Constructing the 32-mile long Main TWR starting at MP386.7 Dalton Highway.
2) Constructing a 300- by 300-foot ice staging pad within one mile of the start of the Main TWR.
3) Constructing the 500-by 500-foot Charlie #1 ice drill pad.

The TWRs will be built to accommodate drill rig moves, and pads will be built to safely carry out drilling and support operations. TWR and ice pads will be constructed and maintained using

the generally accepted practices for the North Slope, subject to ADNR opening criteria for winter tundra travel in the lower North Slope foothills. Pre-packing of the trail will be requested prior to the official tundra opening to drive frost down and preserve early snow. Additionally, TWR crossings at established subsistence and winter trails will be constructed to provide a smooth transition to ensure trail users have safe passage. Upon completion of use, TWR stream crossings will be slotted, breached, or weakened to facilitate breakup and minimize potential impacts to stream banks.

J. Airstrips

AEA has identified two locations for potential ice airstrips and plans to construct a single airstrip in one of the locations as needed. The airstrip may be used to transport crew members and materials required for the operation. The preferred location is on Lake A28 with an alternate plan for Lake A23. Both lakes are within the MTRS U004N011E Sec 7. The airstrip will be designed to accommodate up to a 30-passenger aircraft and may be up to 300 feet wide and 5,000 feet in length.

K. All Other Facilities and Equipment

A list of typical equipment used to support drilling activities is provided in Appendix C of the Plan. Equipment types will be the same used for North Slope oil and gas operations and will be obtained from North Slope contractors. Resources will be mobilized from Prudhoe Bay Unit in the event of a major medical issue or fire to provide additional emergency response, per an existing Ballot Agreement. Medical evacuation, if necessary, will be provided by ambulance, helicopter, or fixed-wing aircraft, using the TWR as an airstrip, using the Lake A28 and A23 airstrips if built or using Franklin Bluffs airstrip and flying or driving to the Beacon Clinic in Deadhorse for patient stabilization and transfer to a medevac jet to an Anchorage hospital facility. If the weather precludes medevac operations from the TWRs, the patient will be transported via ambulance to Fairweather Deadhorse Aviation Center (DAC) for evacuation.

L. Rehabilitation Plan

Upon completion of drilling and evaluation operations, the wells will either be plugged and abandoned or suspended in accordance with AOGCC regulations. Equipment and structures will be removed from the Project area at the end of the season. Ice pads and roads will be scraped to remove dark colored drips missed by the ACC spill technician and the resulting snow will be thawed with resulting oily water disposed of at a permitted disposal facility. Trash and debris will be removed and transported for disposal at a permitted disposal facility. AEA will conduct an inspection and "stick picking" operation via helicopter in Summer 2020 to ensure clean-up requirements have been met.

Although activities will be conducted from TWRs and ice pads, impacts to vegetation and habitat may occur. Therefore, AEA will inspect the Project area following snowmelt in 2020 during "stickpicking" to confirm that tundra damage did not occur. If tundra damage is discovered, AEA will consult with the State and the NSB to determine the appropriate methods for restoration and incorporate them into a Tundra Damage Rehabilitation/Remediation Plan that meets requirements found in NSBMC § 19.30, 19.500 and § 19.60, ADL 393380 lease conditions, and specific State requirements. The Plan will address the area, type, and extent of damage and will be developed in accordance with the Alaska Coastal Revegetation & Erosion Control Guide (developed by the State of Alaska Plant Materials Center), the Streambank Revegetation and Protection Guide (developed by the Alaska Department of Fish and Game),

and other relevant guidance documents. Agency personnel will be invited to verify that rehabilitation operations are complete and that any issues identified are addressed.

M. Operating Procedures Designed to Minimize Adverse Effects

Fish and Wildlife Habitats:

Ice pads and ice roads are to be used only in winter months during the open winter tundra travel season. Streams will be crossed in shallow waters that normally freeze to bottom or will be bridged using temporary bridges founded on ice ramps and abutments. Willow habitats were identified/located during fieldwork in August 2017. The location of Charlie #1, as identified in this Plan, has since been altered to avoid negatively impacting the willows. In summary, all AEA activities will be conducted to minimize impacts on fish and wildlife. This includes mitigation measures outlined in the ADL lease stipulations and adherence to State of Alaska and NSB land management regulations and permit requirements. A wildlife avoidance and interaction plan and a bear avoidance interaction plan (for both grizzly and polar bears) has been prepared and will be included in the site orientation for all project personnel.

Historic and Archaeological Sites:

AEA has completed a consultation, survey, and fieldwork to inventory prehistoric, historic, and archeological sites (resources) on and around the proposed ice pads and TWR alignments. This work was performed in June 2017 by Reanier & Associates, Inc. (Reanier). As part of the survey, TLUI data was obtained by Reanier from the NSB Inupiat Heritage and Language Center (NSB IHLC) and reviewed, along with data from Alaska Heritage Resource Survey and National Register of Historic Places. This data and a field report will be submitted for review by the NSB Planning and Land Management Department, Cultural Resources Office, and the DNR/OHA. The data and field report both indicate there are no archaeological, historic, or cultural resources within 0.4 miles of the Main TWR alignment, Charlie TWR Spur alignments, or staging and drill ice pad locations. Additionally, AEA has created a series of 500-foot buffers around sites Reanier identified during the study, where traffic will be excluded. Combined with drilling operations limited to winter when the ground is frozen and covered with snow, these zones will help provide adequate protection for the historic and archaeological resources. Finally, it is AEA's intention that historic, cultural, and archaeological resources (or suspected resources) discovered during project activities are not to be disturbed under any circumstance. This will include providing relevant training to all field personnel as part of the project orientation. If archaeological sites are discovered during project activities, then the following steps will be taken:1) Project personnel discovering historical or archaeological (or suspected) resources during operations will not disturb materials in place at the site of discovery and mark the area with flagging tape; 2) Project personnel will stop all activities and then request that their job supervisor contact AEA's onsite representative; 3) AEA will report these properties to SHPO and NSB ILHC for identification and assessment, and 4) AEA will use identification and assessment consultations to guide further planned activities in the site area.

Public Use Areas:

The proposed operations occur near the Nuiqsut Subsistence Use area. AEA will conduct operations to minimize any adverse effects on subsistence uses and avoid conflicts with private, commercial, and industrial users. If potential subsistence issues are identified, then subsistence representatives will be contacted and updated during drilling and testing operations to minimize impacts. The permitting actions associated with the exploration wells will be public noticed as part of the permitting processes. If there are public concerns about the project, then AEA will be

receptive and proactive. Although public access to the AEA TWR must be restricted due to safety concerns, AEA will provide shelter and assistance to subsistence users in emergency situations.

Other Uses:
Permits and Leases:
AEA will contact all lessees and permittees before entering their surface lands and gain approval through letters of non-objection.

Simultaneous Operations:
The only other use in the general area will be possible activities by other oil and gas companies or geophysical companies. When identified, AEA will contact those companies to discuss and avoid simultaneous operations problems.

Training Programs:
AEA's training program has been designed to inform individuals of the environmental, social, and cultural concerns that relate to their job functions. Training components include a review of permit stipulations and requirements, cultural awareness, spill prevention and reporting, wildlife interaction, site specific safety, and waste management practices. All personnel will participate in a specific training program module for bear safety and a briefing of the Bear Avoidance, Interaction, and Mitigation Plan. In addition, AEA employees and contractors are required to complete an 8-hour training program provided by the North Slope Training Cooperative (NSTC). NSFEH, ASH, and a North Slope Visitor's Guide are used for the training. The training program includes classes on the ASH, personal protective equipment, camp and safety orientation, hazard communication, Hazardous Waste Operations, Emergency Response Level l, and Environmental Awareness. Additionally, AEA requires that all company personnel and contractors attend rig and location safety meetings and participate in the contractor's safety practice on-site training orientation and required weekly safety meetings. Topics discussed in safety meetings will include various emergency action drills familiarizing workers with the wildlife interaction plans, warnings and hazing methods, reviewing spill/incident reporting requirements and spill prevention measures, reviewing fluid transfer procedures, general hazard identification regarding the various chemicals used in drilling operations and other activities, reviewing cold weather operations, and personal protection.

Interacting with Local Communities and Community Groups:
As part of the permitting process, AEA has published public notices detailing planned winter drilling program operations in Utqiagvik, Fairbanks, and Anchorage, and has been responding to requests for additional information from individuals and non-government organizations interested in the project.

In approving a Plan, DNR may require amendments necessary to protect the State's interest (11 AAC 83.158). The Division has determined that to protect the State's interest, it is necessary to incorporate the 2018 North Slope Mitigation Measures or the most recently adopted. AEA addressed these mitigation measures in the application process, but it is necessary to amend the Plan to make clear that the Plan incorporates the North Slope Mitigation Measures.

All plan applicants must complete a mitigation measure analysis form demonstrating that each mitigation measure is satisfied or inapplicable to the proposed Plan, or that the applicant is

seeking an exception. The North Slope Mitigation Measures allow the Division to grant an exception if the applicant shows that compliance with the measure is not practicable or that the applicant will undertake an equal or better alternative to satisfy the intent of the mitigation measure. AEA completed the mitigation measure analysis for the North Slope areawide and no exception(s) were requested.

The Division has determined that to protect the State's interest, it is necessary to incorporate the North Slope Mitigation Measures as amendments and stipulations to this Plan (11 AAC 83.158(e)).

N. Phased Evaluation

The Plan addresses exploration activities for Charlie #1, but based on the results of this exploration, the Division anticipates that AEA may submit Plans for additional exploration wells. Thus, in considering the exploration phase, the Division considered both the specific activities proposed under this Plan as well as typical exploration activities that AEA might propose for further exploring the leases.

The Division considered the potential impacts of exploration on public and State interests. In the oil and gas context, the public interest includes maximizing economic and physical recovery of oil and gas resources (AS 38.05.180(a)(1)). The State has an interest in protecting the public interest, and in encouraging assessment of oil and gas resources while minimizing the adverse impacts of exploration, development, production, and transportation activities (AS 38.05.180(a)(2)).

In considering potential impacts, the Division also considered the operating procedures AEA has designed to minimize adverse effects of the Plan activities. These operating procedures include complying with the mitigation measures attached to the leases. These measures come from the North Slope Areawide Best Interest Finding (BIF) to address potentially negative effects of oil and gas exploration on fish and wildlife species, habitats and their uses, subsistence uses and local communities. AEA has provided a mitigation measure analysis, which is required as part of their Plan submittal.

i. <u>Facilities impacts on the project area:</u>
All facilities will be temporary and have been designed to meet federal and state requirements as well as those of the NSB. The proposed facilities will all be placed on ice pads and there will no new gravel placement to support the Plan. Demobilization of the facilities is proposed to begin on February 22, 2020, and will be in accordance with the North Slope Mitigation Measure A.1.i.

ii. <u>Fuel and hazardous substances potential impacts on the project area:</u>
The exploratory drilling proposed under the Plan, as well as other exploratory drilling AEA might propose during the exploration phase, will result in drilling muds, cuttings, and produced water and pose some risk of a spill. Discharges of drilling muds, cuttings, and produced waters; oil spills; and accidental spills of fuel, lubricants, or chemicals can all have impacts to water, wildlife, and habitats during this exploration program. Impacts from exploration activities, from either disposal activities or a spill, could adversely affect water quality, but impacts are expected to be local and temporary because of dilution, settling, and other natural altering and regenerative processes.

iii. Habitat, Fish, Wildlife and Subsistence:

1. Habitat:

Any exploration activity can impact habitat, fish, and wildlife. The North Slope Mitigation Measures are designed to minimize these impacts. The Plan activities will take place over a limited time and involve ice roads and temporary facilities. The Division anticipates impacts to habitat, fish, and wildlife will also be limited and temporary. The Division also anticipates that any future Plans for the exploration phase will involve similarly limited and temporary activities and impacts.

2. Fish:

The Sagavanirktok River is an anadromous stream, supporting the spawning and overwintering of several species of fish that then migrate to nearshore coastal waters to feed in the summer. Migration patterns vary by species and within species by life stage. Potential effects of exploration activities include degradation of stream banks and erosion, reduction of or damage to overwintering areas, impediments to migration, and fish kills due to oil spills. A potential habitat impact at the exploration phase is erosion. Erosion results in siltation and sedimentation, which in turn may result in a reduced or altered stream flow that may affect overwintering habitat availability and the ability of fish to migrate upstream. Protecting the integrity of stream bank vegetation and minimizing erosion are important elements in preserving fish habitat. Streambeds could be affected if stream banks are altered from equipment crossings.

Withdrawal of water from lakes and ponds could affect fish overwintering habitat by entraining juvenile fish, lowering water levels, and increasing disturbance. Removal of water from lakes where fish overwinter may affect the viability of overwintering fish, and longer-term effects of lake drawdown may impede the ability of fish to return to the lake in subsequent years. Removal of snow from lakes may increase the freeze depth of the ice, kill overwintering and resident fish, and adversely affect the ability of fish to utilize the lake in future years.

North Slope Mitigation Measure A.2.b requires that removal of water from fish-bearing rivers, streams, and natural lakes have prior written approval by DMLW and ADFG. Water intake pipes used to remove water from fish-bearing waterbodies must be surrounded by a screened enclosure to prevent fish entrainment and impingement, with screen mesh size no greater than one mm (0.04 inches), unless another size is approved by ADFG. The maximum water velocity at the surface of the screen enclosure may be no greater than 0.1 foot per second, unless an alternative has been approved by ADFG.

Before a permit to appropriate water is issued, DMLW considers local demand and may require applicants to conduct aquifer yield studies. Generally, water table declines associated with the upper unconfined aquifer can be best mitigated by industrial users tapping confined (lower) layers or searching for alternate water sources.

3. Wildlife:

Exploration-related disturbance is expected to have minor impacts on caribou, particularly large groups, with animals being briefly displaced from feeding and resting areas when vehicles pass nearby. Vehicle traffic associated with transportation corridors, such as the Dalton Highway, has the potential to affect habitat use. Acute disturbance effects may in

combination result in a cumulative effect on habitat availability for those individuals with fidelity to the Kuparuk River calving area but may have little or no effect on the Central Arctic herd population. It is expected these disturbances would be short term.

Moose are present across the North Slope, with the largest concentration along the Colville River and its tributaries. Moose generally remain in the foothills and along river corridors. AEA's proposed drilling program is expected to have little effect on the North Slope moose population.

The temporary displacement of some polar bears from preferred habitats may result from routine exploration activities such as the proposed Plan activities and activities AEA proposes throughout the exploration phase. Females in dens are at risk for disturbance from any vehicular traffic or noise. Due to its proximity to existing transportation infrastructure, the Charlie #1 Exploration Well Plan is unlikely to significantly increase temporary displacement and disturbance above the level caused by existing transportation activities.

Polar bears continually search for food. Once bears find a camp or industrial site, they will often enter to explore and search for food. If a bear receives a food reward, then it is more likely to return. Polar bears often investigate not only things that smell or act like food, but also novel sights or odors. Subadult bears are more likely than well-fed bears to be food-stressed and attracted to human activity. Subadults are also less likely to leave if a potential food source is present. Attractants include kitchen odors, deliberate feeding, accessible garbage, sewage lagoons, carcasses, industrial materials, and alteration of habitat.

Brown bears can be found throughout the Arctic region in varying densities. The lowest densities occur along the coastal plain; brown bears are at the northern limits of their range in the Arctic. The availability of food is limited and their reproductive potential is low. Brown bears may be subject to disturbance from oil and gas activity. During exploration, human activity may attract foraging bears, especially to refuse disposal areas. Omnivores are attracted to food and food odors associated with human activity and may become conditioned to non-natural food sources. This may pose a threat to human safety and the potential need to dispatch nuisance animals. Bears can also be displaced by human land use activities.

There are several regulations imposed by state, federal, and local agencies that are implemented to avoid, minimize, and mitigate these potential effects to bears. In addition to complying with the Endangered Species Act and the Marine Mammal Protection Act, AEA must comply with mitigation measures to minimize effects of exploration activities on bears.

4. Subsistence:
Traditional subsistence uses in the area include: brown bear, caribou, musk ox, and moose harvesting; hunting and trapping of furbearers such as wolf, fox, weasel, wolverine, and squirrel; hunting migratory waterfowl and collecting their eggs; fishing for whitefish, char, salmon, smelt, grayling, trout, and burbot; and collecting berries, edible plants, and wood.

Potential exploration activities that could have effects on subsistence uses in the area include discharges from well drilling and ongoing disturbances from operation activities such as vehicle traffic. Noise, traffic disturbance, and oil spills generally produce short-term impacts on subsistence species.

The North Slope Areawide BIF contains several mitigation measures intended to reduce conflicts with subsistence, commercial, and sport harvest activities. Prior to submitting a Plan to the Division, the lessee must consult with affected subsistence communities and the NSB to discuss reasonably foreseeable effects on subsistence during the proposed operations, and methods of proposed operations and safeguards or mitigation measures that can be implemented to prevent unreasonable conflicts. The lessee must make reasonable efforts to ensure that the proposed exploration activities are compatible with subsistence hunting and fishing and will not result in unreasonable interference with subsistence harvests. The Division may implement restrictions, as appropriate, to reduce potential conflicts.

iv. Historic or archeological sites:

While exploring, AEA could encounter prehistoric, historic, or archaeological sites. AS 41.35.200 addresses unlawful acts concerning cultural and historical resources. In addition, all field-based response workers are required to adhere to historic properties protection policies that reinforce that it is unlawful to collect or disturb, remove, or destroy any historic property or suspected historic property, and to immediately report any historic property that they see or encounter.

Under NSBMC, proposed exploration shall not impact any historic, prehistoric, or archaeological resource before the assessment of that resource by a professional archaeologist (NSBMC 19.50.030(F)). NSBMC 19.70.050(F) says, "Development shall not significantly interfere with traditional activities at cultural or historic sites identified in the Coastal Management Program." These provisions give the NSB authority to protect cultural and historic resources and current subsistence uses of these sites.

North Slope Mitigation Measures require the lessee to conduct an inventory of prehistoric, historic, and archaeological sites within the area affected by an activity. The inventory must include consideration of literature provided by the NSB, nearby communities, Native organizations, and local residents; documentation of oral history regarding prehistoric and historic uses of such sites; evidence of consultation with the Alaska Heritage Resources Survey and the National Register of Historic Places; and site surveys. The inventory must also include a detailed analysis of the effects that might result from the activity. A cultural resources survey and inventory was conducted in the project area to identify any prehistoric, historic, or archaeological sites. AEA has obtained cultural clearances from the SHPO and NSB Cultural Resources Department on potential historical and archaeological resources. Because of the history and long-term use of the FBP, no sites are proposed that would impact cultural, historical or archaeological resources.

V. CONSIDERATION OF LEASE PLAN OF OPERATIONS REQUIREMENTS UNDER 11 AAC 83.158(c-d) and 11 AAC 83.160

A. Full Payment of Damages to the Surface Owner 11 AAC 83.158(c)

The State owns the surface and full payment of damages to the State are accomplished through a bond posted by the applicant discussed in subsection C below.

B. Plan Sufficiency 11 AAC 83.158(d)

A proposed plan must include statements, maps, or drawings setting forth

(1) the sequence and schedule of operations;
(2) the projected use requirements directly associated with the proposed operations;
(3) plans for rehabilitation; and
(4) a description of operating procedures to prevent or minimize adverse effects on natural resources and concurrent uses of the area (11 AAC 83.158(d)).

The information in Section IV: Proposed Operations, and additional information contained in AEA's proposed Plan satisfy the requirements for a Plan under 11 AAC 83.158(d) and thus provide the Division with sufficient information to determine the surface use requirements and impacts directly associated with the proposed operations.

C. Oil and Gas Lease Bond 11 AAC 83.160

The State owns all the surface land where the proposed Plan activities will be located. The State owns all the mineral estate the Plan proposes to explore. A lessee provides for payment of damages by posting a bond before operations commence and remains liable for full damages under the lease. AEA has a cash trust account in the amount of $100,000 for operations on ADL 393380 and continuing liability under the lease.

VI. CONSULTATION WITH OTHER GOVERNMENT ENTITIES

In reviewing the proposed Plan, the Division considered the fact that AEA may require approvals from Agencies for other elements of its project. Although mentioned in the Plan and above, these aspects of the project are not approved by this decision and the Division offers no opinion on whether an agency should or should not approve these activities.

In addition to considering the approvals required by Agencies as they relate to this decision, the Division provided an Agency review and comment opportunity for the activities proposed for authorization under this decision. The following government entities were notified on September 6, 2019, for comment on the Plan: USACE, SPCO, ADFG, DEC, DMLW, and NSB. The comment deadline was 4:30 pm Alaska time on September 20, 2019. No Agency comments were received. The Plan was then publicly noticed.

VII. PUBLIC NOTICE

Public notice of the Plan and opportunity to comment, per AS 38.05.035, was published in the Alaska Dispatch News and the Arctic Sounder on October 1, 2019, with a deadline for comments of October 31, 2019, at 4:30 pm Alaska time. Additionally, a copy of the notice was posted on State of Alaska and Division web sites and faxes of the public notice were sent to the Nuiqsut, Deadhorse, and Utqiagvik post offices. No comments were received.

VIII. CONDITIONS OF APPROVAL

Having considered the proposed project, the Division approves the Plan as amended and modified by this decision and subject to the following Conditions of Approval.

To protect the State's interest, the Division finds that it is necessary to amend the Plan to incorporate the following Conditions of Approval:

a) The applicant shall defend, indemnify and hold the State of Alaska harmless from and against any and all claims, damages, suits, losses, liabilities and expenses for injury to or death of persons and damage to or loss of property arising out of or in connection with the entry on and use of State lands authorized under this approval by the applicant, its contractors, subcontractors and their employees.
b) The applicant shall inform and ensure compliance with any and all conditions of this approval by its employees, agents and contractors, including subcontractors at any level.
c) Unless pre-authorized by a general permit, amendments and modifications to this approval require advance notice and must be approved in writing by the DNR.
d) The Commissioner of the DNR may require that an authorized representative be on site during any operations conducted under this approval. This stipulation is required to ensure that the Divisions of Oil and Gas and Mining, Land and Water meet their statutory responsibilities for monitoring activities taking place on State-owned lands.
e) A status report for the activities conducted under this approval must be filed on May 1 and November 1 each year, from the date this approval is issued and until a final completion report is filed with the Division. If a lessee requests an assignment, then a status report must also be submitted during the assignment process. Failure to file in a timely manner may result in revocation of this approval.
    a. Each status report shall include a statement describing and map(s) depicting all operations actually conducted on the leased area as of the date the report is prepared, which includes the location, design and completion status of well sites, material sites, water supplies, solid waste sites, buildings, roads, utilities, airstrips, and all other facilities and equipment installed.
    b. Upon completion of operations, the applicant will submit a completion report that will include all information required of a status report described in (a) above as well as a statement indicating the date of operations completion, any noncompliance with the terms of this plan approval of which a reasonable lessee would have knowledge of, clean-up activities conducted, the method of debris disposal, and a narrative description of known incidents of surface damage.
f) Notification. The applicant shall notify the DNR of all spills that must be reported under 18 AAC 75.300 under timelines established therein. All fires and explosions must be reported to DNR immediately. The DNR 24-hour spill report number is (907) 451-2678; the fax number is (907) 451-2751. The Department of Environmental Conservation (DEC) oil spill report number is (800) 478-9300. DNR and DEC shall be supplied with all follow-up incident reports.
g) A certified As-Built survey of the improvement shall be provided within one year of placement of the improvement. This As-Built must be submitted in both electronic and physical format.

To protect the State's interest, the Division finds that it is necessary to amend the Plan to incorporate the following project-specific stipulations:

1. Geophysical Data Submission Requirement Form: The Applicant will notify the Division Director of the availability of processed seismic exploration data within 30 days of completion of initial processing and submit seismic exploration data. The Geophysical Data Submission Requirements can be found on the DNR Division's website.
2. Geophysical Activity Completion Report Form: The Applicant must complete and return a Geophysical Activity Completion Report form for each VSP acquired. A non-confidential public completion report will be placed into the Plan file each time a VSP is completed. Geophysical Activity Completion reports must be submitted to the Division's Resource Evaluation Section within 30 days of completion of all activities. For in-depth instructions on how to complete the form, please refer to the Division's website. If no activities are completed under the Plan, then an Activity Completion Report form must be submitted on or before January 15, 2019; be sure to check box 27 to indicate the survey was cancelled.
3. Geophysical Processing Completion Report Form: The Applicant must complete and return a Geophysical Activity Completion Report form for each VSP acquired. A confidential Processing Completion report will be submitted each time a VSP is completed. The Processing Completion reports must be submitted to the Division's Resource Evaluation Section within 30 days of completion of initial processing. For in-depth instructions on how to complete the form please refer to the Division's website.

IX. FINDINGS AND DECISION

Having considered the proposed project and based on the foregoing discussion and consideration of issues and conditions of approval, the Division makes the following findings:

1. The Plan provides sufficient information, based on reasonably available data, for the Division to determine the surface use requirements and impacts directly associated with the proposed operations.
2. The Plan includes statements, maps, or drawings setting forth the sequence and schedule of operations, projected use requirements, description of operating procedures, and a plan of rehabilitation designed to prevent or minimize adverse effects.
3. To protect the State's interest and mitigate potential adverse social and environmental effects associated with the Plan, the Division finds it necessary to amend the Plan to incorporate the mitigation measures set forth in the North Slope Areawide Oil and Gas Lease Sale Final Finding.
4. All oil and gas activities conducted under oil and gas leases are subject to numerous local, state and federal laws are regulations with which AEA is expected to comply.
5. The people of Alaska have an interest in developing the state's oil and gas resources and maximizing the economic and physical recovery of those resources (AS 38.05.180(a)).
6. Alaska's economy depends heavily on revenues related to oil and gas production and government spending resulting from those revenues. The related revenue sources include bonus payments, rentals, royalties, production taxes, income taxes, and oil and gas property taxes.
7. The potential benefits of approving this Plan outweigh the possible adverse effects, which have been minimized through imposition of mitigation measures, conditions of approval, and project specific stipulations, and thus approval of this Plan as modified is in the State's best interest.

Based upon the Plan, supporting information provided by the applicant and the Division's review; determination of applicable statutes and regulations; consultation with other agencies, relevant entities, and individuals; public comment; and the above findings related to that Plan, the Division hereby approves the Plan.

Sincerely,

November 22, 2019

Graham Smith
Permitting Section Manager
Division of Oil and Gas

Date

Appeal

An eligible person affected by this decision may appeal it, in accordance with 11 AAC 02. Any appeal must be received within 20 calendar days after the date of issuance of this decision, as defined in 11 AAC 02.040(c) and (d), and may be mailed or delivered to the Commissioner, Department of Natural Resources, 550 W. 7th Avenue, Suite 1400, Anchorage, Alaska 99501; faxed to 1-907-269-8918; or emailed to dnr.appeals@alaska.gov. This decision takes effect immediately. An eligible person must first appeal this decision in accordance with 11 AAC 02 before appealing this decision to Superior Court. A copy of 11 AAC 02 may be obtained from any regional information office of the Department of Natural Resources.

Attachments: Appendix A: Maps and Figures 1-5 and 9-11
2018 North Slope Mitigation Measures

ecc: DOG: Graham Smith, James Hyun, Ashley Ethridge, Mark Henspeter and SPCO Records
DMLW: DMLW North Slope and Henry Brooks
ADFG: Jack Winters
DEC: Laurie Silfven and DEC Oil and Gas
Borough: Mabel Kaleak, Abel Hopson-Suvlu, Price Leavitt, SeeSeei Pili and Gordon Brewer
Other: regpagemaster@usace.army.mil

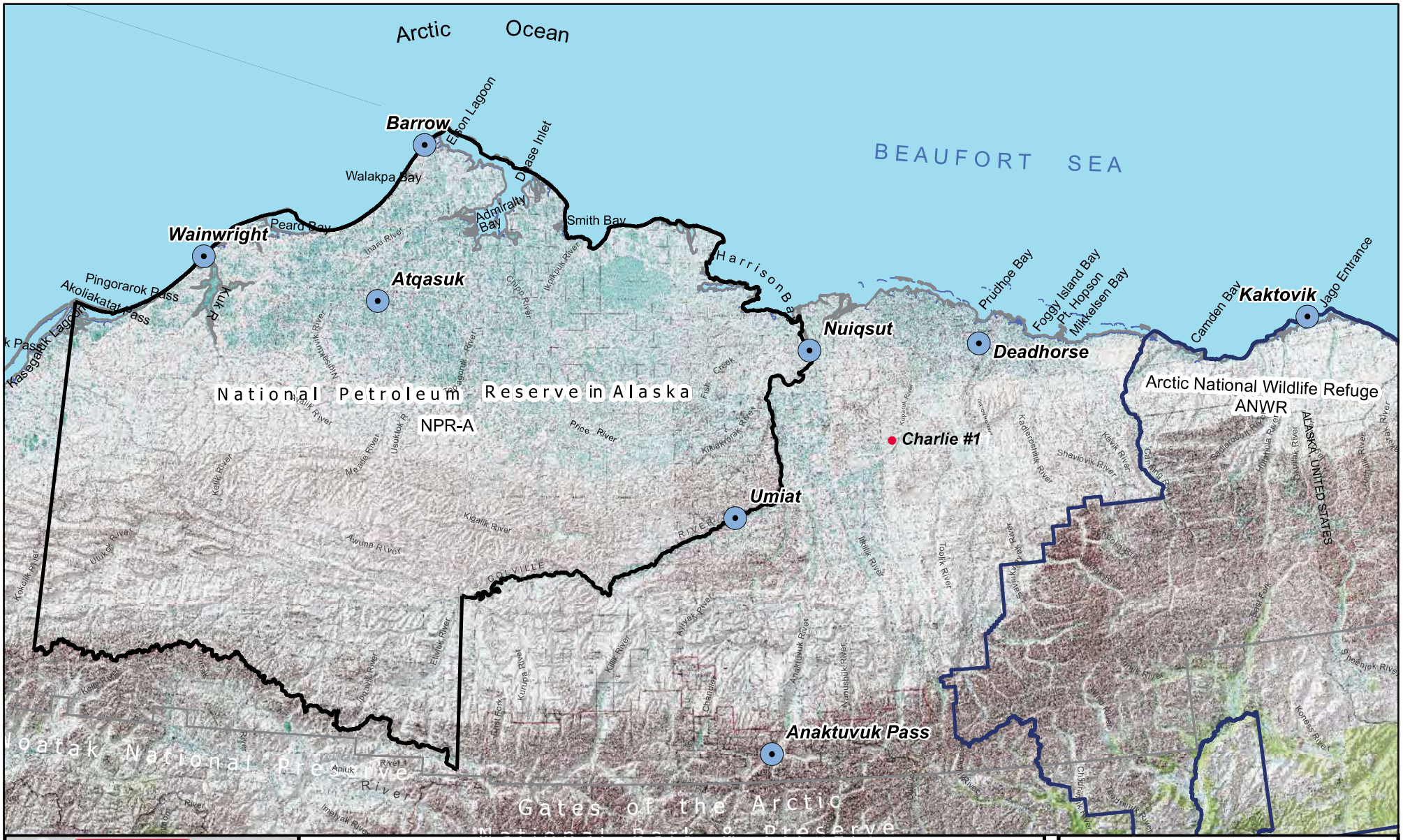
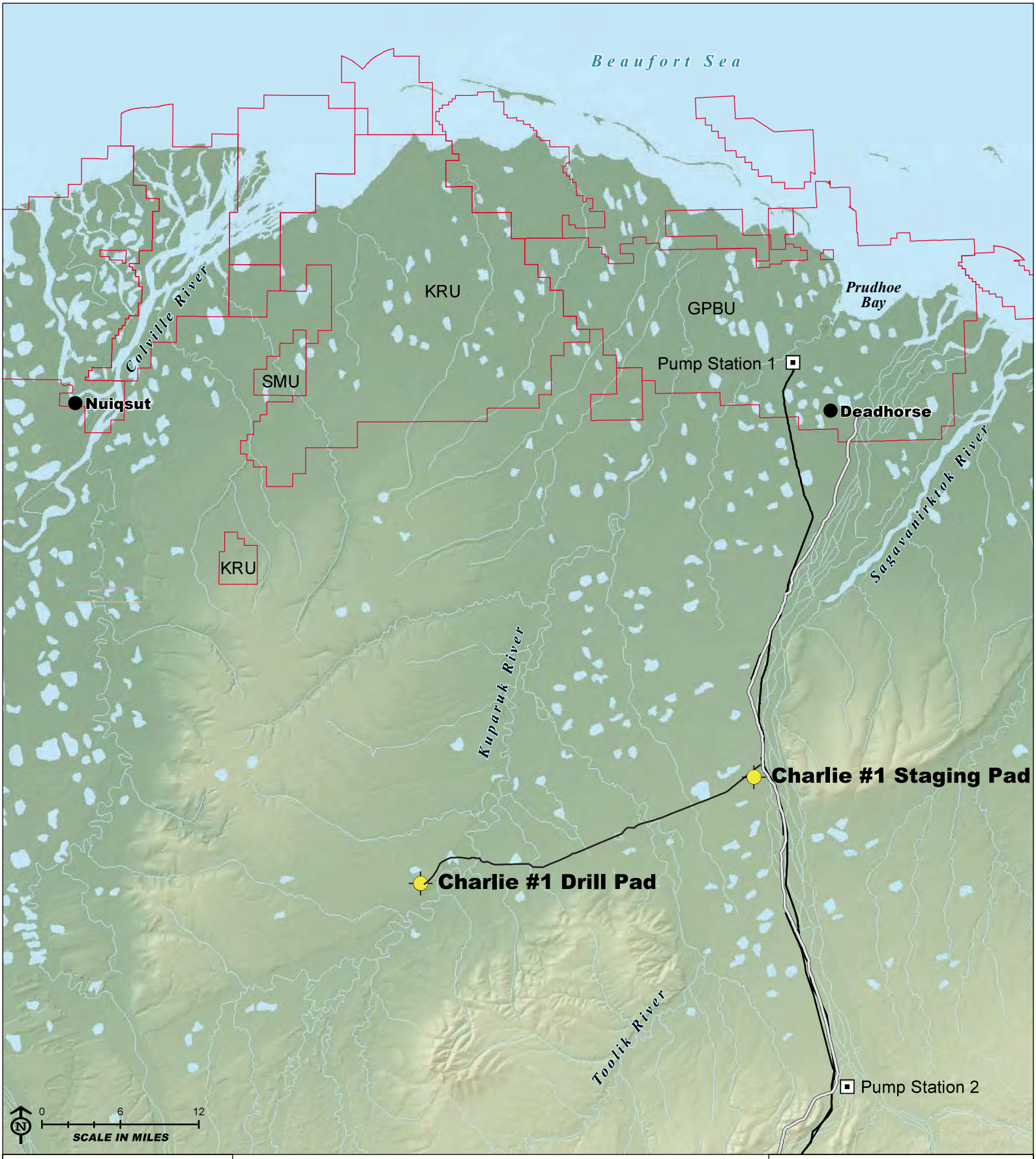
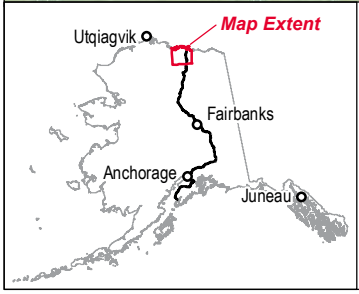


Figure 1
ICEWINE Project Exploration Wells
CHARLIE #1

General Vicinity Map

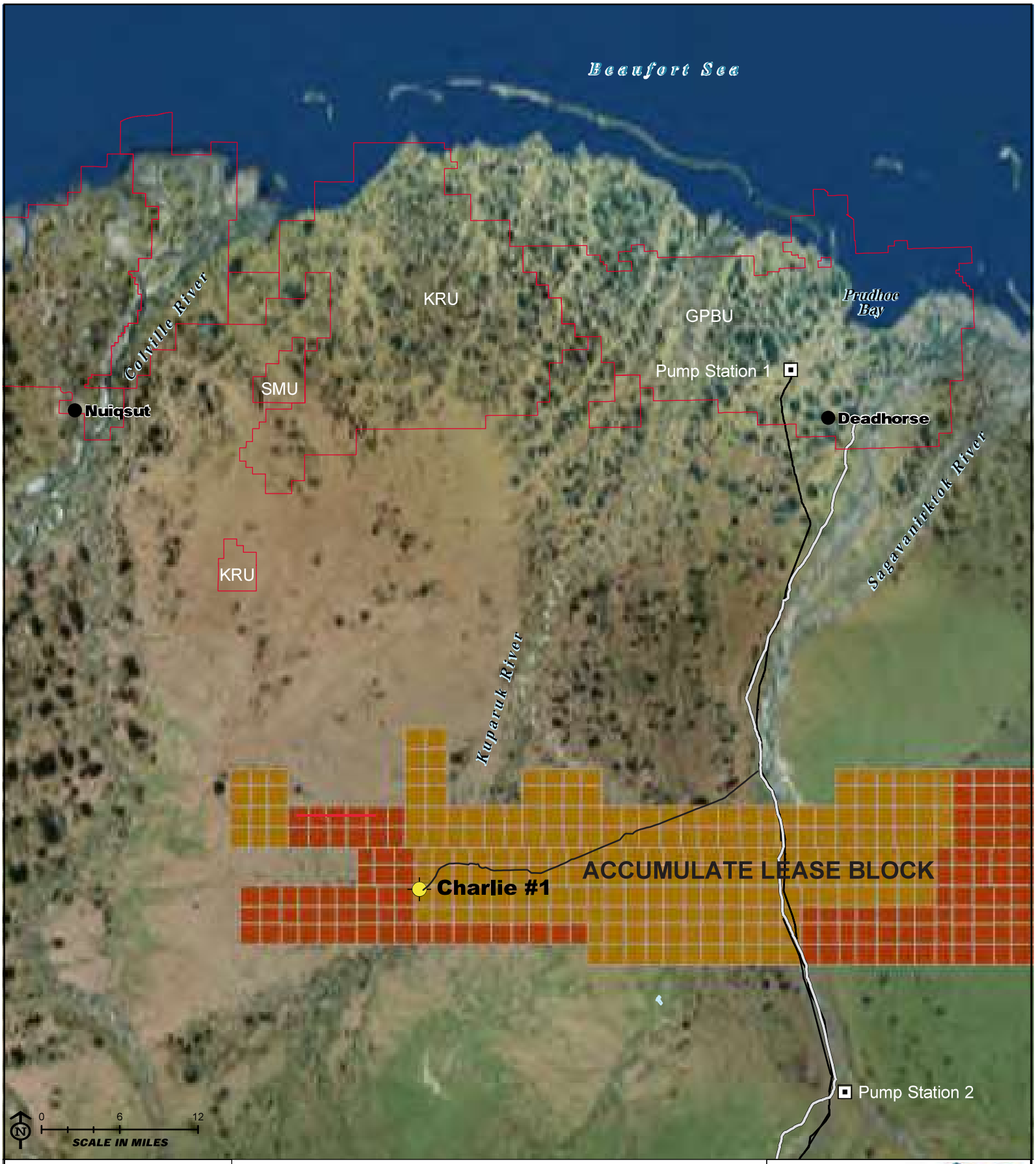


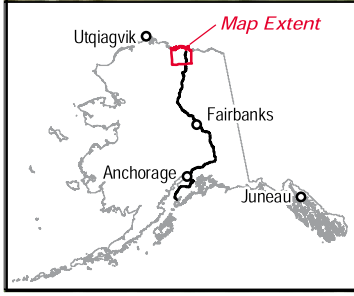


LEGEND

- Charlie #1 pads
- Villages and Service Areas
- TAPS Pump Stations
- Proposed Tundra Winter Ice Road
- Dalton Highway
- Trans-Alaska Pipeline System
- Oil & Gas Unit Boundary

Figure 2
ICEWINE Project Exploration Wells
CHARLIE #1
Project Vicinity Map

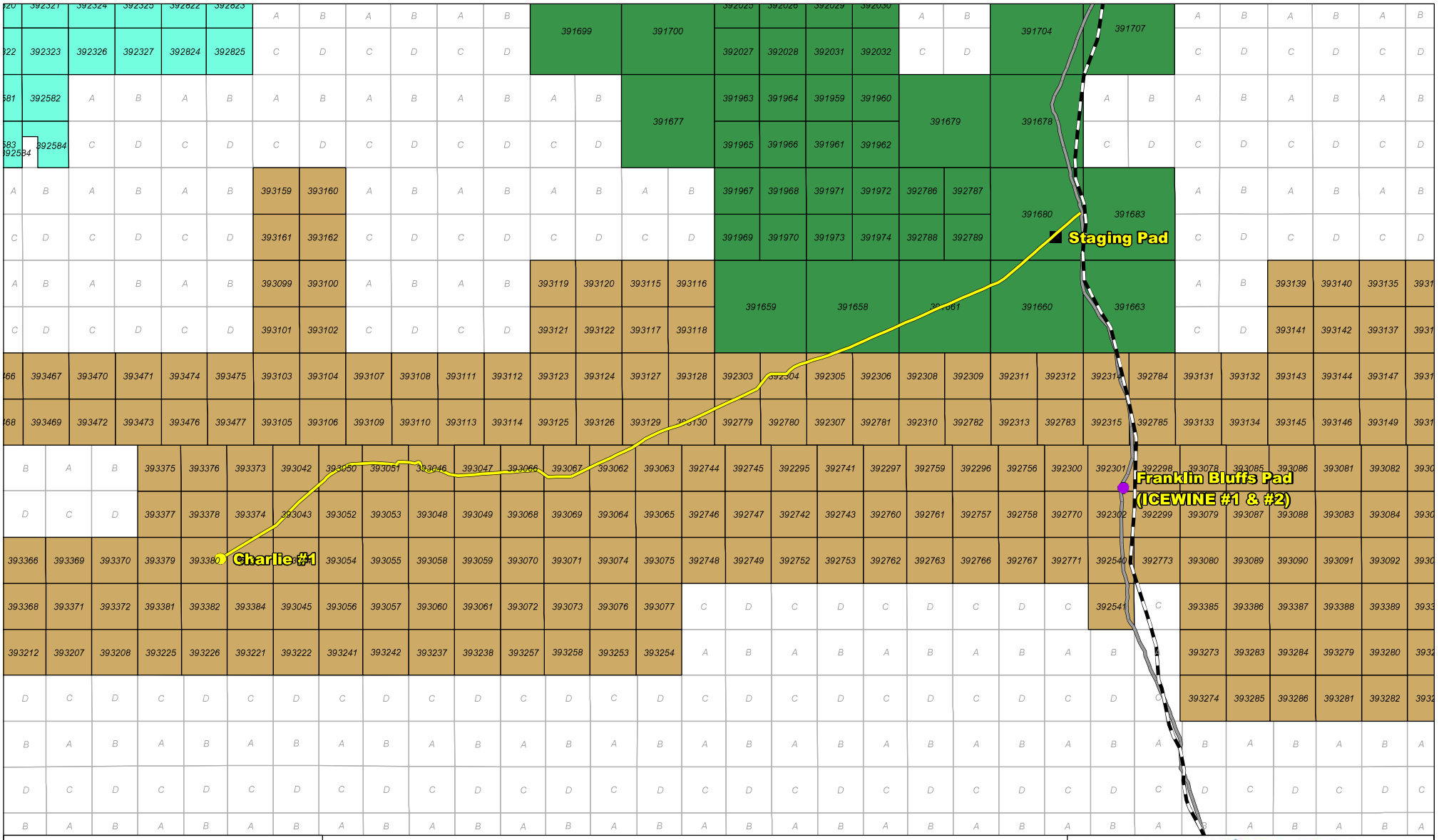


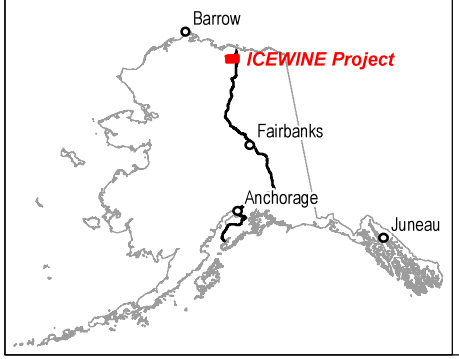


LEGEND

- Charlie #1
- Villages and Service Areas
- TAPS Pump Stations
- Proposed Tundra Winter Ice Road
- Dalton Highway
- Trans-Alaska Pipeline System
- Oil & Gas Unit Boundary
- ACCUMULATE Lease Block

Figure 3
ICEWINE Project Exploration Wells
CHARLIE #1
AEA Lease Block





LEGEND

- Charlie #1
- Franklin Bluffs Pad (ICEWINE #1 & #2)
- Staging Pad
- Proposed TWR
- Trans-Alaska Pipeline System
- Dalton Highway ("Haul Road")
- Accumulate Energy Alaska, Inc.
- Oil Search (Alaska), LLC
- Pantheon Alaska Petroleum Oper Ating LLC

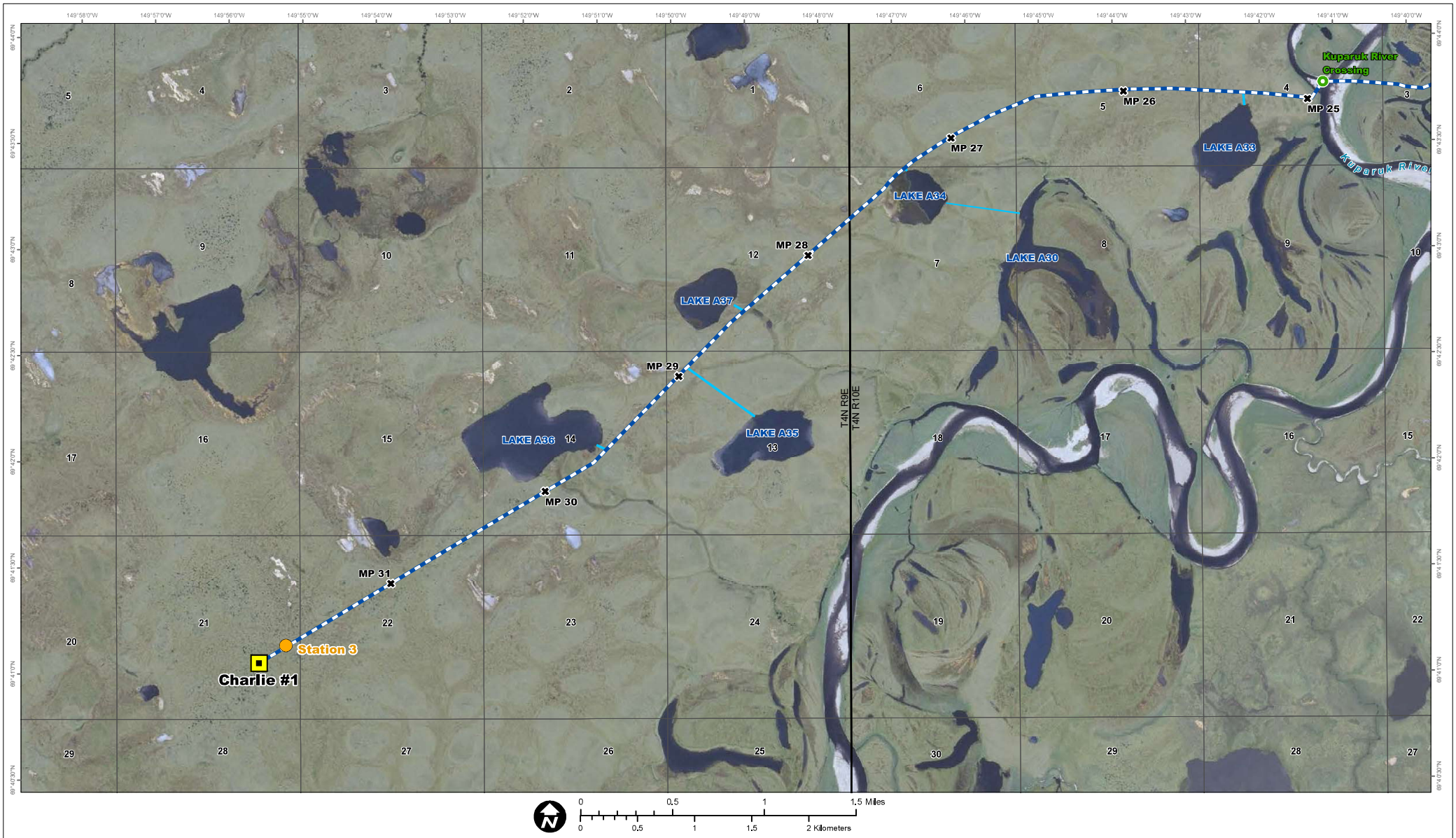
ACCUMULATE ENERGY

Figure 4

ICEWINE PROJECT EXPLORATION WELLS

Charlie #1

AEA ADL Oil & Gas Leases Area Map



ACCUMULATE ENERGY

Map Location

ALASKA

Sheet Index

5a 5b 5c 5d 5e

Drill Site
AHRS Site
Thermistor Station
Proposed Main TWR
Water Source Access Road
Proposed Stream Crossing
LAKE A5 Proposed Water Source

Figure 5e
ICEWINE Project Exploration Wells
Charlie #1
Proposed TWR with Water Sources and Stream Crossings - Aerial MTRS

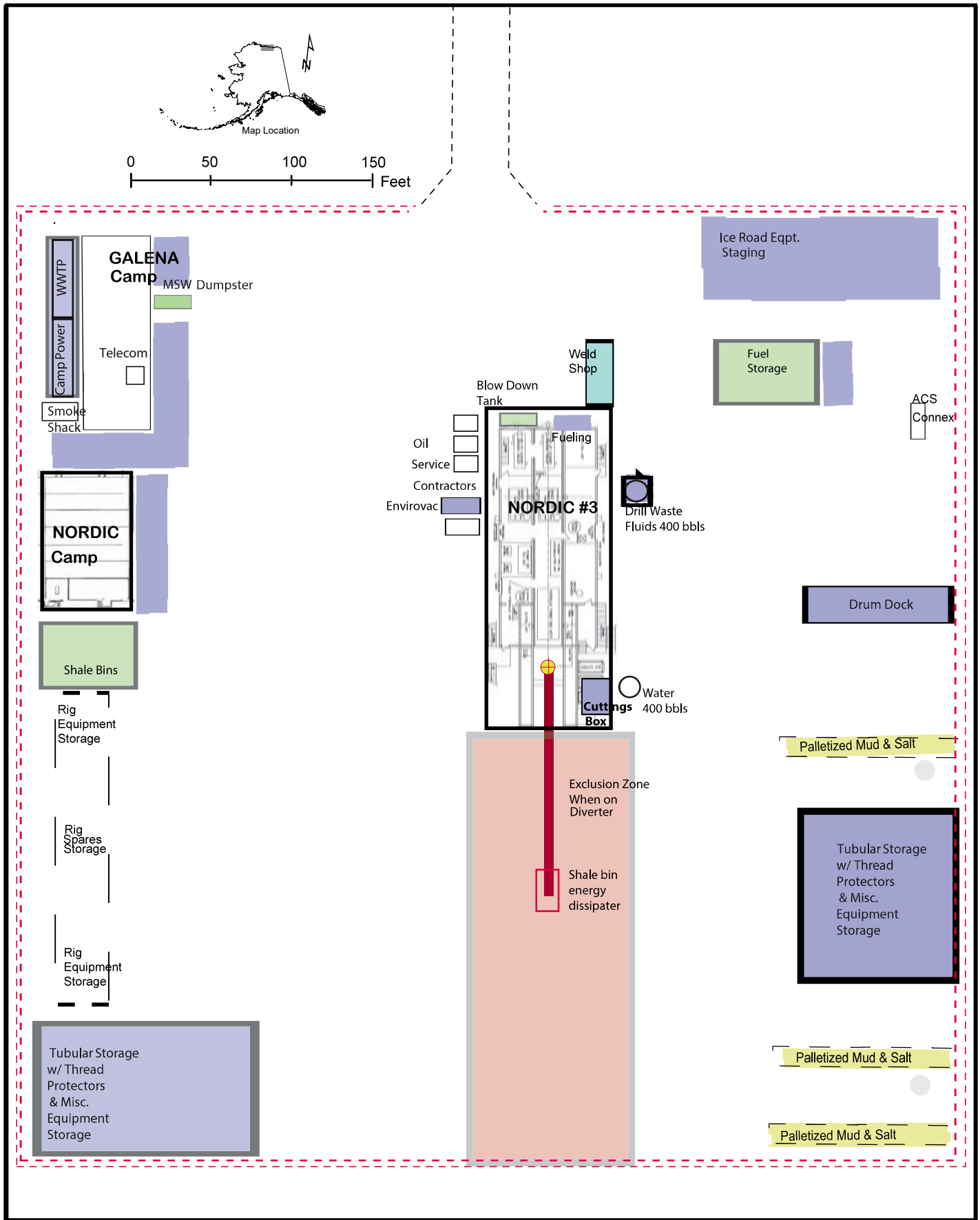
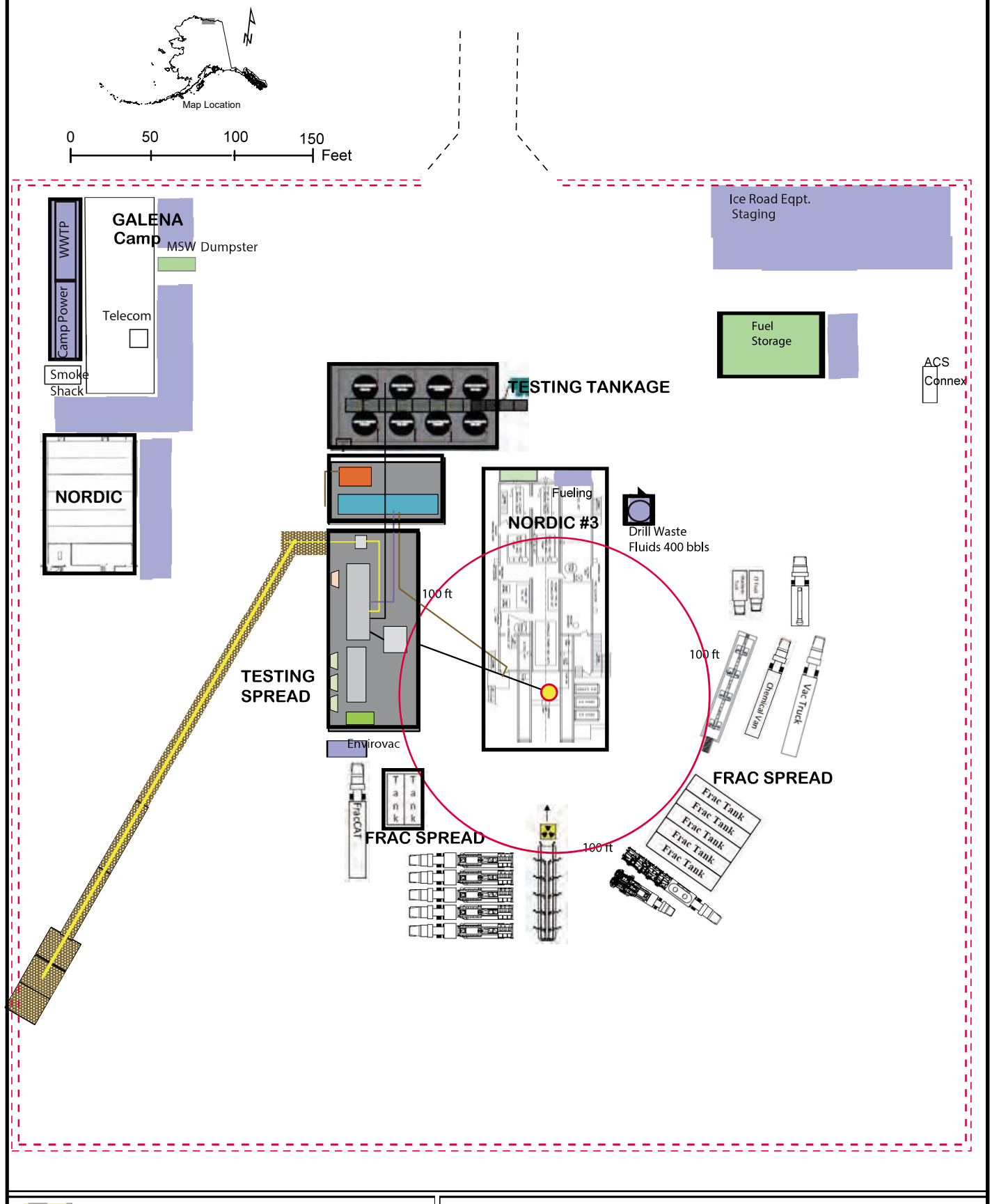


Figure 9
ICEWINE Project Exploration Wells
Charlie #1

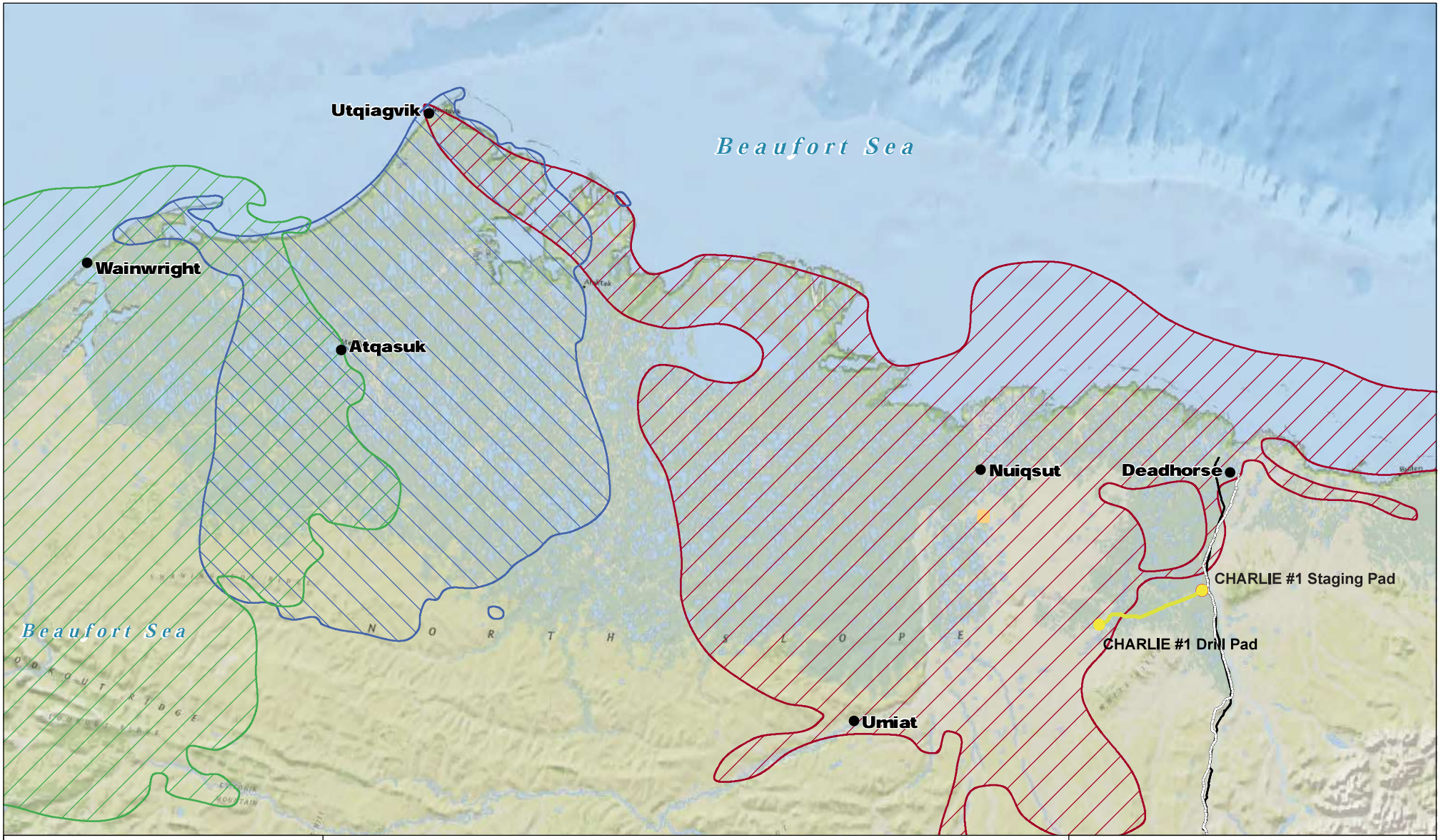
Drilling Operations Layout

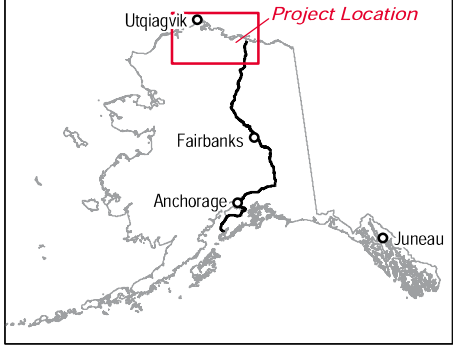


Processing & Storage Area
Equipment Maintenance Area
Waste Treatment & Storage
Staging, Lay Down Areas w/ Potential for Spills
Lined SCA
1' Snow Berm

Figure 10
ICEWINE Project Exploration Wells
Charlie #1

Frac and Testing Operations Spreads





LEGEND

- Town/Village
- Dalton Highway
- Trans-Alaska Pipeline System
- Charlie #1 Pads
- Atqasuk Subsistence Use Area
- Nuiqsut Subsistence Use Area
- Wainwright Subsistence Use Area

0 20 40
SCALE IN MILES

Figure 11
ICEWINE Project Exploration Wells
Charlie #1
Subistence Use Areas